INDUCTION HARDENED PARTS AND PRODUCTION THEREOF

Publication number: JP11131176 (A)
Publication date: 1999-05-18
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Classification:
- international: ***C21D8/00; C21D1/10; C21D9/32; C22C38/00; C22C38/06; C22C38/14;*** **C21D8/00; C21D1/09; C21D9/32; C22C38/00; C22C38/06; C22C38/14;** (IPC1-7): C22C38/00; C21D1/10; C21D8/00; C21D9/32; C22C38/06; C22C38/14
- European:
Application number: JP19970295899 19971028
Priority number(s): JP19970295899 19971028

Also published as:
JP3606024 (B2)

Abstract of **JP 11131176 (A)**

PROBLEM TO BE SOLVED: To obtain machine parts such as gears having characteristics equal to or better than those of carburized particles as for machinability or the like with high productivity by specifying the chemical compsn. of steel and the number and size of oxide nonmetallic inclusions and furthermore specifying hot forging conditions in a secondary working process.; SOLUTION: Steel having a compsn. contg., by weight, 0.5 to 0.75% C, 0.5 to 1.8% Si, 0.1 to 1.5% Mn, <=0.020% P, 0.019 to 0.05% Al, <=0.0015% O and 0.003 to 0.015% N, contg., at need, one or more kinds among 0.05 to 0.5% Mo, 0.0003 to 0.005% B, 0.005 to 0.05% Ti, 0.1 to 1.0% Ni, 0.005 to 0.5% V and 0.01 to 0.5% Nb, and the balance Fe is heated to the temp. region of the Ac3 -100 deg.C to the Ac3 +200 deg.C, is forged at >=70% draft in the temp. region, is next cooled at a rate of 0.005 deg.C/sec and is thereafter subjected to induction hardening and tempering treatment to obtain the parts in which the number of oxide nonmetallic inclusions in the steel is regulated to <=2.5/mm<2> and the maximum size thereof is regulated to <=19 &mu .